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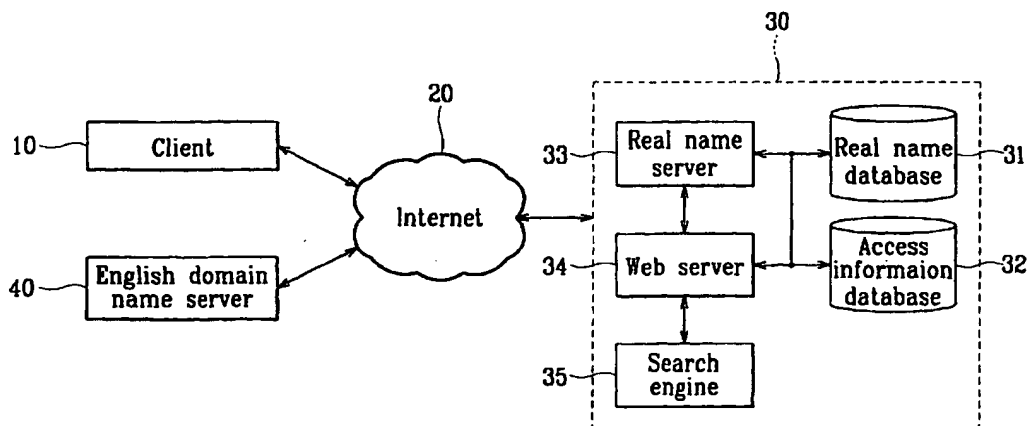
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(54) Title: WEB PAGE ACCESSING SYSTEM AND METHOD USING REAL NAMES



(57) Abstract: Disclosed is a web page accessing system and method using real names. A real name database stores one or more real names with respect to one Internet address. When a client inputs an access word on a browser to access a specific web page, the real name server searches for the real name database and finds the corresponding Internet Protocol (IP) address and provides the same to the client. Therefore, the client accesses the web page corresponding to the IP address provided by the real name server. Since the user can access the desired web pages using the real name as well as the conventional English domain name, the user does no need to remember the domain names of the specific web pages in every case.



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## Web Page Accessing System and Method Using Real Names

### BACKGROUND OF THE INVENTION

#### (a) Field of the Invention

5       The present invention relates to a web page accessing system and method using real names. More specifically, the present invention relates to a web page accessing system and method using real names in Korean or other foreign languages as well as English when accessing a specific web page on the Internet.

#### 10 (b) Description of the Related Art

      The Internet is not just a group of collected computers, but rather it is a huge connected network which is formed by interconnection of various and different computers. Physical addresses, that is, the Internet Protocol (IP) for identifying the computers are assigned to the respective computers  
15 connected to the Internet.

      However, since these physical addresses comprise four groups, each of which comprises a number below or equal to 255 (e.g., 134.78.238.99), it is very difficult for users to remember these number sequences, and every time the user tries to access a specific computer  
20 connected to the Internet, it is very troublesome for the user to type the IP address in every case.

      Hence, instead of accessing the computer by direct use of the physical address, methods for matching the IP address with memorable word sequences are generally used, and when the user inputs the word  
25 sequences, it automatically accesses the computer which has the corresponding IP address. The word combination used instead of the IP address is referred to as the domain name.

      On the other hand, when registering the domain name by using web hosting services, that is, by using service providers which provide services  
30 for those who do not actually have a computer corresponding to the domain

name but want to have the domain name registered via the host computers of the service providers, one or more domain names can be assigned with respect to the IP address.

As mentioned above, the domain name indicates the Internet address of the computer connected to the Internet, generally comprising identifiers representing the characteristics of the computer or geographical location. For example, "ABC.co.kr" of an email address james@ABC.co.kr is the actual domain name, and "ABC.co.kr" of a uniform resource location (URL) which is an IP address http://www.ABC.co.kr is the actual domain name. And "internic.net" of the URL http://www.internic.net/index.html is the domain name, and "index.html" is a file name including a directory storing corresponding information.

Therefore, to use the domain name instead of the IP address of the computer, an additional device to correspond the IP address of each computer with the domain name is required, and each computer connected to the Internet by this requirement is related to a computer system, that is, a domain name server (DNS).

Generally, when a client requests a check of an IP address of a domain name of a corresponding computer, for example an IP address of "def.co.kr", to a set domain name server so as to access a specific computer on the Internet, the domain name server asks for an IP address corresponding to a domain name input to a server of a registration authority managing the IP addresses, and returns the IP addresses provided from the registration authority to the client, and accordingly, the client accesses the computer having the corresponding IP address.

As described above, the corresponding domain name must be known in order to access the specific computer on the Internet. However, since the domain names have combinations of English characters according to a predetermined rule, people of non-English speaking nations such as Korea, Japan, or China have relative difficulty remembering the English domain names.

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Also, in the case where a directory or a file name storing information is requested in order to access a specific web page, the directory or the file name for accessing the specific page may have been modified by a computer manager, and it is also a combination of English  
5 characters, like the domain names.

Therefore, it is difficult to memorize the domain names and the file names for accessing the Internet web pages, and it requires much time to input the domain names and the file names.

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### **SUMMARY OF THE INVENTION**

It is an object of the present invention to provide a web page accessing system and a method for easily accessing a web page using the real names of the web page without inputting the URL, such as the domain name of the Internet web page.

15 In one aspect of the present invention, in a web page accessing system connecting a client to a specific web page on the network, a web page accessing system comprises: a database storing matched Internet Protocol (IP) addresses, Uniform Resource Locator (URL) information, and real names of a plurality of web pages; and a real name server, when an  
20 access word input by the client is the real name, searching the real name database using the real name, finding a corresponding IP address and providing the IP address to the client in order for the client to access the web page corresponding to the IP address.

The real name database stores a plurality of the real names  
25 corresponding to one IP address, and the URL information corresponding to each real name.

The system further comprises: a web server which connects the client to the corresponding web page according to the URL information corresponding to the real name input by the client; and the real name server,  
30 when another real name corresponds to the IP address corresponding to the real name input by the client, provides the IP address of the web server to

the client so that the client accesses the web server.

The system further comprises an access database which stores access information including the IP address of the client which accesses the real name server, and the web server connects the client to the  
5 corresponding web page according to whether or not the IP address of the accessing client is stored in the access database.

In another aspect of the present invention, in a web page accessing system connecting a client to a specific web page on the network, a web page accessing system comprises: a real name database storing  
10 matched Uniform Resource Locator (URL) information and real names on a plurality of web pages; a web server, when an access word input by the client is a real name, searches for the real name database and finds the corresponding URL information using the real name, and connects the client to the corresponding web page according to the URL information; and a  
15 hook module, when the client checks an access word input event and the access word input event occurs, provides the input access word to the web server.

The system further comprises an access banning database which stores English domain names on a plurality of the web pages to which  
20 access is to be banned, and the web server, when the access word input from the client is the English domain name and is stored in the access banning database, bans the access to the web page corresponding to the access word.

In a still further aspect of the present invention, in a method for  
25 connecting a client to a corresponding web page using a database storing matched Internet Protocol (IP) addresses, Uniform Resource Locator (URL) information, and real names on the web pages on the network, a web page accessing method comprises the steps of: determining whether an access word input by the client is the real name; searching the database and finding  
30 the IP address corresponding to the real name when the access word is the real name; and providing the IP address to the client so that the client accesses the web page corresponding to the IP address.

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The method further comprises a step of connecting the client to the corresponding web page according to the URL information input by the client in the case where another real name corresponds to the IP address corresponding to the real name input by the client.

5 In a still further aspect of the present invention, in a method for connecting a client to a corresponding web page using a real name server and an English domain name server providing corresponding Internet Protocol (IP) addresses corresponding to the web pages on the network by processing non-English real names and English domain names, a web page  
10 accessing method comprises the steps of: (a) determining whether an access word input from the client is the non-English real name or the English domain name; (b) encoding the real name with an English data format when the access word is the real name; (c) providing the encoded real name to the real name server to request a corresponding IP address; (d) providing the  
15 English domain name to the English domain name server to request a corresponding IP address when the access word is the English domain name; and (e) providing the IP address provided by the real name server or the English domain name server to the client so that the client accesses the web page corresponding to the IP address.

20 In the step (a), when the access word input by the client is represented in eight bits and the most significant bit (MSB) is '1', the access word is determined to be the real name, and when the access word input by the client is represented in eight bits and the most significant bit (MSB) is '0', the access word is determined to be the English domain name.

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### **BRIEF DESCRIPTION OF THE DRAWINGS**

The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate an embodiment of the invention, and, together with the description, serve to explain the principles  
30 of the invention:

FIG. 1 shows a block diagram of a web page accessing system

using real names according to a first preferred embodiment of the present invention;

FIGs. 2 (a) and (b) show flow charts for operations of the web page accessing system using real names according to the first preferred  
5 embodiment of the present invention;

FIG. 3 shows a block diagram of a web page accessing system using real names according to a second preferred embodiment of the present invention;

FIG. 4 shows a flow chart for operations of the web page accessing  
10 system using real names according to the second preferred embodiment of the present invention;

FIG. 5 shows a block diagram of a web page accessing system using real names according to a third preferred embodiment of the present invention;

15 FIG. 6 shows an example of the web page accessing system using real names according to the third preferred embodiment of the present invention;

FIGs. 7 (a) and (b) show flow charts for operations of the web page accessing system using real names according to the third preferred  
20 embodiment of the present invention;

FIG. 8 shows a block diagram of a web page accessing system using real names according to a fourth preferred embodiment of the present invention; and

FIG. 9 shows a flow chart for operations of the web page accessing  
25 system using real names according to the fourth preferred embodiment of the present invention.

### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

In the following detailed description, only the preferred embodiment  
30 of the invention has been shown and described, simply by way of illustration of the best mode contemplated by the inventor(s) of carrying out the



invention. As will be realized, the invention is capable of modification in various obvious respects, all without departing from the invention. Accordingly, the drawings and description are to be regarded as illustrative in nature, and not restrictive.

5 In the web page accessing system according to the preferred embodiment of the present invention, the real names which include Korean, other foreign languages except English, numbers, or symbols corresponding to all the Internet addresses (IP addresses and URLs) registered on the Internet, are defined in a separate way so that the users can access the web  
10 pages using the real names. The real names can be one-word English.

For ease of explanation, the URLs such as the conventional domain names or the file names will be referred to as English domain names, a server for providing an Internet address confirming service with respect to the existing domain names as an English domain name server, and  
15 character sequences input by a client to access a specific web page as access words. Therefore, the access words include the English domain names and the real names as the domain names. The real names indicate the real names such as the company names, trade names, or service names, but are not restricted to these.

20 The web page accessing system according to the preferred embodiment of the present invention can be applied to the world wide web (WWW), the Internet email, the file transfer protocol (FTP), and the telnet.

The web page accessing system according to the first preferred embodiment of the present invention will now be described.

25 FIG. 1 shows a block diagram of the web page accessing system using real names according to the first preferred embodiment of the present invention.

As shown, the web page accessing system using the real names comprises a client 10, and an access device 30 for the client 10 to access  
30 the web page on the Internet 20. The web page accessing system using the real names further comprises an English domain name server 40 for processing the conventional domain name server, that is, the English

domain names.

The number of the clients 10 can be one or more, and the client 10 provides the access words corresponding to the web pages to be accessed by the access device 30.

5       The access device 30 is a site which allows the client 10, which tries to access a specific Internet web page using the English domain names or the real names, access to the corresponding web page. The access device 30 comprises a real name database 31, an access information database 32, a real name server 33, a web server 34, and a search engine 35.

10       The real name database 31 stores one or more real names corresponding to each of the IP addresses on the Internet 20, and stores the URL information corresponding to the respective real names. For example, a real name 넷피아 (standing for Netpia in the Korean language) is stored corresponding to an IP address 210.103.175.66, and a URL information  
15 netpia.net corresponding to the real name 넷피아 is stored.

The access information database 32 stores access information on the client which requests an IP address confirmation to the real name server 33, that is, when it tries to access the specific web page of the Internet 20 via the real name server 33.

20       The real name server 33 determines whether the access words input from the client 10 are the English domain names or the real names, and when the input access words are the English domain names, the real name server 33 provides the input access words to the English domain name server 40 to be processed, and when the input access words are the real  
25 names, the real name server 33 provides the corresponding IP addresses to the client 10 based on the data stored in the real name database 32.

Since generally used English domain names comprise dots as shown in "samsung.co.kr", the real name server 33 determines whether the input access words are the English domain names or the real names  
30 according to whether or not the dots are included in the input access words.

On the other hand, when the input access words are not stored in

the real name database 31, or another real name corresponds to the IP address corresponding to the input access word, that is, in the case where the corresponding IP address is not the real IP address, the real name server 33 stores the client access information in the access information database 32 so that the client access information may be processed by the web server 34 in a later process.

Here, the URL information corresponding to the IP address of the client 10 and the input access word, or the input access word become the access information of the client, and especially when the IP address corresponding to the input access word is not a real IP address, the access information is formatted as a first format, and when the input access word is not in the real name database 31, the access information is formatted as a second format to be stored in the access information database 32.

The web server 34 supports the client 10 to access through the Internet. In the first preferred embodiment of the present invention, the web server 34 connects the client 10 to a corresponding web page according to whether the client 10 accessing through the Internet 20 tried to access the specific web page through the real name server 33.

The web server 34 searches for the access information database 32 using the IP address of the client 10, and when the corresponding IP address is contained in the access information formatted as the first format, the web server 34 connects the client 10 to the corresponding web page according to the URL information included in the corresponding access information.

On the other hand, when the IP address of the accessing client 10 is in the access information formatted as the second format, the web server 34 drives the search engine 35 to collect the information comprising the access words of the corresponding access information from a plurality of servers on the Internet 20.

The search engine 35 searches for the data of the servers on the Internet 20 using the access word as a search word according to the control of the web server 34, collects the information of the web page providing the

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information including the access word input by the client 10, and provides the same to a search results page.

Here, a computer is used as the client 10, but mobile stations to be connected to the Internet 20 and other communication devices such as TVs  
5 having the Internet accessing functions can be used.

An operation of the web page accessing system using the real names according to the first preferred embodiment of the present invention will now be described.

Here, before driving an Internet browser, the client 10 executes an  
10 Internet access environment setting program and sets the real name server 33 of the access device 30 with a server which provides an address confirmation service. On the other hand, it is preferable that the IP addresses of the generally used English domain name server 40 are previously backed up and the same are returned together with a termination  
15 of the Internet access environment setting program of the client 10 so that no changes may occur in basic usage by the client 10.

FIGs. 2 (a) and (b) show a flow chart for operations of the web page accessing system using real names according to the first preferred embodiment of the present invention.

20 As shown in FIG. 2 (a), when the user drives the web browser or an email program at the client 10 and inputs an access word in an access word inputting window of the browser, the input access word is provided to the real name server 33 of the access device 30 in step S100.

The real name server 33 determines whether the access word  
25 provided by the client 10 is the English domain name or the real name in step S110. For example, in the case where the input access word includes an identification character ‘.’ (a dot character) such as in ‘netpia.net’, the real name server 33 determines that the input access word is the English domain name and provides the input access word to the English domain  
30 name server 40 in step S120.

Accordingly, the English domain name server 40 provides the IP address corresponding to the input access word in order for the client 10 to

access the web page having the corresponding IP address in step S130.

On the other hand, in the case where the input access word in the step S110 does not include the identification character '.', the real name server 33 determines that the input access word is the real name, and  
5 searches the real name database 31 to find the corresponding IP address by using the input access word in steps S140 and S150.

In the case where the input access word is stored in the real name database 31, the real name server 33 determines whether the IP address corresponding to the corresponding access word is the real IP in step S160.  
10 In the case where the IP address is the real IP address, that is, when the IP address corresponding to the real name which is the input access word does not correspond to another real name, the real name server 33 provides the searched IP address to the client 10 in order for the client 10 to access the web page having the corresponding IP address in steps S170 and S180.

15 On the other hand, when the IP address is not the real IP address, that is, in the case where another real name corresponds to the IP address corresponding to the input access word, the real name server 33 provides the client 10 with the IP address of the web server 34 of the access device 30 providing the Internet access mediating service, and together with this,  
20 formats the client access information including the IP address of the client 10 and the URL information corresponding to the input access word as the first format, and stores the formatted information in the access information database 32 in step S190. The access information formatted as the first format will be referred to as first access information hereinafter for ease of  
25 explanation.

In the step S150, the real name server 33 provides the IP address of the web server 34 of the access device 30 providing the access mediating service to the client 10 even when the input access word is not stored in the real name database 31, and formats the client's access information including  
30 the IP address of the client 10 and the input access word as the second format and stores the formatted information in the access information database 32 in step S200. The access information formatted as the second

format will be referred to as second access information hereinafter for ease of explanation.

In the case of storing the access information, for example, when the IP address of the client of which the user requested a connection is set as a file name, and the URL information or the access word corresponding to the input access word is stored in the corresponding file, the access information can be stored in the access information database 32, and by storing a specific symbol in the file, the stored access information can be determined to have been formatted as either the first or the second formats.

As described above, in the case where another real name corresponds to the IP address corresponding to the input access word, or the input access word is not stored in the real name database 31, the client access the web server 34 of the access device 30 according to the IP address provided by the real name server 33 in step S210.

Next, as shown in FIG. 2 (b), when the client accesses the web server 34, the web server 34 determines whether the IP address of the accessing client 10 is stored in the access information database 32 so as to detect whether the client 10 was a device which had tried to access the specific web page via the real name server 33 in steps S220 and S230.

In the case where the IP address of the accessing client 10 is stored in the access information database 32, the web server determines whether the corresponding access information is the first access information in step S240.

In the case where the access information of the accessing client 10 is the first access information, that is, when the IP address corresponding to the access word of which the client 10 requested the confirmation of the IP address is not the real IP address, the web server 34 connects the client 10 to the corresponding web page according to the URL information included within the first access information in step S250.

In the case where the access information of the accessing client 10 is the second access information, that is, when the access word input by the client 10 is not stored in the real name database 31, the web server 34

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drives the search engine 35 to collect information including the corresponding access word from a plurality of the servers connected on the Internet 20, and connects the client 10 to the information search result page in steps S260 and S270.

- 5 For example, when the access word included in the second access information is 넷피아, the search engine 35 collects the information of the web pages which include the word 넷피아 from all the servers on the Internet 20, and converts the searched results into HTML format and provides the same to the client 10 for the user to browse the results on the browser.
- 10 Accordingly, when the user clicks specific information which displays the desired web page from the search results, the client 10 is connected to the corresponding web page.

In the step S230, in the case where the IP address of the accessing client 10 is not stored in the access information database 32, that is, when

15 the client 10 did not request a confirmation of the IP address via the real name server 33, the client 10 is connected to an established page, for example, the homepage of the access device 30 in step S290.

In the web page accessing system using the real names according to the first preferred embodiment of the present invention, the user can easily

20 access desired web pages using the existing English domain names or the real names.

A web page accessing system using the real names according to a second preferred embodiment of the present invention will now be described.

FIG. 3 shows a configuration of the web page accessing system

25 using the real names according to the second preferred embodiment of the present invention.

In the web page accessing system using the real names, when the client accesses the Internet, the client is connected to the web server of the access device providing the access mediating service.

- 30 For this, as shown in FIG. 3, the client 10 of the web page accessing system using the real names further comprises a hook module 11 which

accesses the client 10 to the access device 50 according to whether or not the client 10 accessed the Internet.

The hook module 11 determines occurrences of the Internet-accessing executions by the client 10 (accessing word inputting events) by whether or not the user clicked an enter command on the web browser such as the Explorer, and converts the access word, which was provided on the web browser before the input of the enter function, into a specific query form and provides the converted access word to the access device 50.

The access device 50 comprises a web server 51 and a real name database 52. The access device further comprises an access-banning database 53 which stores English domain names corresponding to specific web pages in order to provide a function to ban access to specific web pages.

The web server 51, differing from the first preferred embodiment of the present invention, can further comprise an access word identifying module 511 which identifies whether or not the access word provided by the hook module 11 of the client 10 is the real name or the English domain name, and an access word processing module 512 which searches for the real name database 52 and connects the client 10 to the corresponding page in the case where the access word is the real name. The web page accessing system according to the second preferred embodiment of the present invention can further comprise a search engine 54.

FIG. 4 shows a flow chart for operation of the web page accessing system using real names according to the second preferred embodiment of the present invention.

As shown, the hook module 11 of the client 10 collects messages which are generated by data inputting or program driving occurring in the client 10 in step S300, and in the case where the collected message is an enter-key operation message and this enter-key function is input on an Internet accessing program such as a web browser, the hook module 11 determines that the word sequences which were input before the enter-key operation is generated are the access words, and converts this access



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words into a specific query form and connects the client 10 to the access device 50 in steps S310 to S330.

For example, when the word sequence 넷피아 is input on the web browser and the enter key is then clicked, the hook module generates the  
5 access word input together with the URL of the access device 50, that is, the specific query sentence as follows:

[http://www.search.netpia.com/search.asp?keyword="netpia"](http://www.search.netpia.com/search.asp?keyword=).

Accordingly, the client 10 accesses the access device 50 with the keyword 넷피아. Therefore, the client 10 accesses the web server 51 of the  
10 access device 50 without accessing an additional server which confirms the IP address.

On the other hand, when the enter key is not working or the enter-key function is not working on the Internet accessing program, the hook module 11 continues to collect the message.

15 When a specific query equation is input from the client 10, the access word identifying module 511 of the web server 51 of the access device 50 determines whether the query equation is the English domain name or the real name according to whether or not the dot character is included in the access word in the specific query equation in step S340.

20 In the case where the dot character is not included in the access word, the access word is determined to be the real name, and the access word processing module 512 searches the real name database 52 to confirm whether the input access word is stored in the real name database 52 in step S350.

25 When the input access word is stored in the real name database 52, the access word processing module 512 connects the client 10 to the corresponding web page according to the URL information corresponding to the access word in steps S360 and S370.

However, when the input access word is not stored in the real name  
30 database 52, the access word processing module 512 drives the search engine 54 to collect information on the web page providing information

including the corresponding access word on the Internet, and connects the client 10 to the search results page like the first preferred embodiment of the present invention in steps S380 to S400.

On the other hand, when the dot character is included in the access word in the step S340, the access word is determined to be the English domain name, and the access word processing module 512 searches the access banning database 53 to determine whether the input access word corresponds to the English domain name of the access-banned web page in step S410.

When the input access word is the English domain name of the access-banned web page (e.g., a pornography web page), the client 10 is not connected to the web page corresponding to the input access word, but to a self-established specific page (e.g., a page for providing a warning message when accessing the web page) in step S420. However, when the input access word is not the English domain name of the access-banned web page, the client 10 is connected to the web page corresponding to the access word in step S430.

As described above, in the web page accessing system according to the second preferred embodiment of the present invention, when an Internet accessing event, that is, an access word inputting event is generated in the client 10, the client 10 directly connects to the access device, and the web page accessing process using the English domain name and the real name is executed within the access device, and thereby, the client accesses the corresponding web page more quickly.

Also, since it is possible to access specific web pages, children or young persons can be effectively prevented from gaining access to pornography web pages.

A web page accessing system using real names according to a third preferred embodiment of the present invention will now be described.

In the above-described first and second preferred embodiments of the present invention, the additional real name server for processing the real names had to be installed. However, in the third preferred embodiment of the

present invention, the real names can be converted into the IP addresses by using a name service providing program such as the BIND which converts the existing English domain names into the corresponding IP addresses. For this, the real names are encoded into the English domain  
5 formats, that is, the English data formats.

Also, in the web page accessing system according to the third preferred embodiment of the present invention, the real names are classified and processed according to a hierarchy to effectively improve the management of the real names.

10 FIG. 5 shows a block diagram of the web page accessing system using real names according to a third preferred embodiment of the present invention. FIG. 6 shows an example of the web page accessing system using real names according to the third preferred embodiment of the present invention.

15 As shown in FIG. 5, the access device 60 of the web page accessing system using the real names according to the third preferred embodiment of the present invention, differing from the first preferred embodiment of the present invention, comprises: a local name server 61 which encodes the access word input by the client 10 into the English data format; a hierarchical  
20 real name server 62 which provides the IP addresses corresponding to the hierarchical real names including the dot characters; a single real name server 63 which provides the IP addresses corresponding to the real names without the dot characters; and an English domain name server 64 which provides the IP addresses corresponding to the English domain names. The  
25 hierarchical real name server 62 and the single real name server 63 confirm the IP addresses using the BIND program used for processing the existing English domain names. Here, a case where the access device 60 comprises the English domain server 64 will be described, but, differing from this, the access device 60 may not comprise the English domain server 64.

30 Hereinafter, the real names classified into hierarchies by the dot characters, for example, the real name having a plurality of the keywords

such as “넷피아.회사” (standing for netpia.com in Korean) will be referred to as the hierarchical real names, and the real names without the dot characters, for example, the real name having one keyword such as “넷피아” (standing for netpia) will be referred to as the single real names.

5           The hierarchical real name server 62 for processing the hierarchical real names step by step to provide the IP addresses of the corresponding web pages, comprises a root name server 621 which is a reference first step server; and a second step name server 622 to nth step name server 62n ( $n = 2, 3, \dots$ ) which are respectively sequentially connected to the previous name  
10 servers. There are one or more step name servers 622 to 62n, excluding the root name server 621. On the other hand, the single real name server 63 can comprise at least one or more root name servers to manage the real names quickly.

For example, as shown in FIG. 6, the hierarchical real name server  
15 62 can configure a four-step hierarchy where the root name server “한국” (standing for Korea) is connected to the second step name servers “회사” (standing for company), “학교” (standing for school), and “기관” (standing for organization), and the second step name server “회사” is connected to the third step name servers “삼성” (standing for Samsung) and “대우”  
20 (standing for Daewoo), and the third name server “삼성” is connected to the fourth name servers “물산” (standing for trading), “반도체” (standing for semiconductor), and “전자” (standing for electronics).

The name servers 621 to 62n of the hierarchical real name server 62 and the single real name server 63 provide the IP addresses corresponding  
25 to the encoded hierarchical real names or the single real names, and comprise a real name database (not illustrated) as shown in the first preferred embodiment of the present invention.

The English domain name server 64 provides the IP addresses corresponding to the English domain names, and can comprise a  
30 hierarchical configuration identical with that of the hierarchical real name

server 62.

FIGs. 7 (a) and (b) show a flow chart for operations of the web page accessing system using real names according to the third preferred embodiment of the present invention.

5 As shown in FIG. 7 (a), when an access word is input from the client 10, the local name server 61 of the access device 60 determines whether the input access word is the English domain name or the real name in steps S500 and S510.

Generally, data such as the languages or numbers are represented  
10 as 8-bit formats, and the most significant bit (MSB) of the 8 bits of the English data is represented as '0', and the MSB of the 8 bits of the non-English data is represented as '1'.

Therefore, the local name server 61 in the third preferred embodiment of the present invention determines whether the input access  
15 word is the English domain name or the real name according to whether the MSB of the 8 bits indicating the access word input from the client 10 is '0' or '1'.

When the MSB is '0', the local name server 61 determines that the input access word is the English domain name, and provides the input  
20 access word to the English domain name server in step S520, and accordingly, the English domain name server 64 provides the IP address corresponding to the input English domain name to the local name server 61. The local name server 61 provides the IP address input from the English domain name server 64 to the client 10 so that the client 10 accesses the  
25 corresponding web page.

However, when the MSB is '1', the local name server 61 determines that the input access word is the real name, and encodes the input access word into the English data format which the domain name service providing program such as the existing BIND can process in step S530.

30 Since the BIND program only processes the English-formed data such as the English alphabets A to Z and a to z, the numbers 0 to 9, and the

hyphen, in the case where the access words are the non-English real names, especially in the case where the real names are Korean characters, the binary numbers indicating the corresponding real names are converted into hexa-decimal numbers, and each hexa-decimal number is processed as one character. However, the method for encoding the real names into the English data format is not restricted to the above-described method.

For example, the English indicates one character with one byte, and the Korean character with two bytes. The English is indicated between '0x0000' and '0x007F', and the Korean from '0xA180' to '0xFEFF'. The hexa-decimal numbers corresponding to the binary numbers are shown in the following table.

TAB. 1

Bin	Hex	Bin	Hex
0000	0	1000	8
0001	2	1001	9
0010	3	1010	A
0100	4	1011	B
0101	5	1100	C
0110	6	1110	D
0111	7	1111	F

In the case where the 4-bit binary numbers are represented as the hexa-decimal numbers as shown in TAB. 1, for example in the case where the input access word is '네티피아', the local name server 61 encodes the access word '네티피아' as follows.

When the word '네티' is represented as '1011001111011101', the word '피' as '1100011111000111', and the word '아' as '1011111011000110' according to the rule of KSC-5601, the local name server 61 divides the 2 bytes of data into 4 bits of data, and converts the word '네티' into '0xB3DD', the word '피' into '0xC7C7', and the word '아' into '0xBEC6' according to TAB. 1. Hence, the word '네티피아' is encoded as

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‘B3DDC7C7BEC6’. The hexa-decimal numbers B, 3, D, etc. are respectively processed as one character, and therefore, B3DD is represented as 4-byte data. By these encoding processes, the word ‘넷피아’ is converted into the English data format having the BMS as ‘0’, and accordingly, the word can be processed in the programs which process the data having the existing English data format such as the BIND program.

The local name server 61 provides the encoded access word to the real name server 62 or the single real name server 63 to be processed.

On the other hand, in the case where the input access word is the hierarchical real name including the dot character, the local name server 61 encodes each access word in the method as described above, and provides the same to the hierarchical real name server 62, and in the case where the input access word is the single real name, the local name server 61 encodes the input access word in the method as described above, and provides the same to the single real name server 62 in step S540.

When the single real name which is the encoded access word is provided by the local name server 61, the single real name server 63 finds the IP address corresponding to the single real name and provides the same to the local name server 61, and the local name server 61 provides the IP address to the client 10 to access the corresponding web page in steps S550 and S560.

When the encoded access word, that is, the hierarchical real name is provided, the hierarchical real name server 62 finds the IP address of the corresponding hierarchical real name sequentially from the root name server 621. First, the local name server 61 provides the encoded hierarchical real name to the root name server 621 in step S570, and the root name server 621 transmits a response message to the local name server 61 to access the next step name server, that is, the second step name server in step S580. The local name server 61 then provides the encoded hierarchical real name to the second step name server 622 in step S590, and when the second step name server 622 can provide the IP address of the encoded hierarchical real

name, the second step name server 622 provides the corresponding IP address to the local name server 61 in steps S600 and S610, and accordingly, the local name server 61 provides the input IP address to the client 10 in step S620.

5 On the other hand, in the case where the second step name server cannot provide the IP address of the encoded hierarchical real name, the second step name server 622 transmits a response message to the local name server 61 to access the next step name server in step S630. The local name server 61 continuously provides the encoded hierarchical real name to  
10 the hierarchical real name server 62 until the IP address is provided by the name server in a step wherein the hierarchical real name has been provided. The name servers of the steps of the hierarchical real name server 62 transmit a response message for requesting a next step name server access or provide the IP address corresponding to the hierarchical real name to the  
15 local name server according to the processing results in steps S640 to S660.

For example, as shown in FIG. 6, when a hierarchical real name '전자.삼성.회사' (standing for electronics.Samsung.company in English) is input, the root name server transmits to the local name server a response message to refer to the second step name server which is the company name server,  
20 and thereby, the local name server provides the '전자.삼성.회사' to the company name server. Since the company name server does not have the IP address corresponding to the '전자.삼성.회사', the company name server transmits to the local name server a response message to refer to the third step name server which is the 삼성.회사 name server, and accordingly, the  
25 local name server finally provides the '전자.삼성.회사' to the 삼성.회사 name server. The 삼성.회사 name server searches for a database of the 삼성.회사 name server to find the IP address corresponding to the 전자.삼성.회사 and provides the same to the local name server, and the local name server provides the IP address to the client. Therefore, the client accesses the web  
30 page of the 전자.삼성.회사.

As noted above, the hierarchical real name server sequentially



processes the keywords of the hierarchical real name from the rightmost one and provides the IP address corresponding to the leftmost keyword to the client. However, not being restricted to this, the hierarchical real name server can sequentially process the keywords of the hierarchical real name  
5 from the leftmost one and provide the IP address corresponding to the rightmost keyword to the client.

Accordingly, since the real name can easily be processed using the program processing the English-data-format domain names in the third preferred embodiment of the present invention, the expense and time use  
10 caused by the changes of the programs can be reduced.

Also, the hierarchical real names can be processed in addition to the single real name including the one keyword, and thereby, the load provided to the server when processing the access words is reduced and the searching process becomes faster and more accurate.

15 A web page accessing system using real names according to a fourth preferred embodiment of the present invention will now be described.

FIG. 8 shows a block diagram of the web page accessing system using the real names according to a fourth preferred embodiment of the present invention.

20 The web page accessing system using the real names according to the fourth preferred embodiment of the present invention is identical to that of the first preferred embodiment of the present invention, but the fourth preferred embodiment does not comprise the access information database, differing from the first preferred embodiment, and when the input access  
25 word is the real name, the real name server 71 does not process this input access word but the web server 72 does.

In the fourth preferred embodiment of the present invention, the web server 72 comprises an access word extracting module 721 which extracts the access word which requested the confirmation of the IP address from the  
30 information of the accessing client 10 to the real name server 71, and a real name processing module 722 which searches for the real name database 73 based on the extracted access word to find the URL information which is the

corresponding Internet address. In addition, the web page accessing system using the real names according to the fourth preferred embodiment of the present invention can further comprise a search engine 74.

FIG. 9 shows a flow chart for operations of the web page accessing system using real names according to the fourth preferred embodiment of the present invention.

As shown, when the access word is input from the client 10, the real name server 71 of the access device 70 determines whether the input access word is the English domain name or the real name in step S700. Here, it is determined whether the access word is the English domain name or the real name according to whether the MSB of the 8 bits indicating the access word is '0' or '1', like in the first preferred embodiment of the present invention.

When the input access word is the English domain name, the real name server 71 provides the input access word to the English domain name server 40, and the English domain name server 40 finds the IP address corresponding to the input access word and provides the same to the real name server 71 in steps S720 and S730.

The real name server 71 provides the IP address provided by the English domain name server 40 to the client 10, and accordingly, the client 10 accesses the web page having the corresponding IP address in steps S740 and S750.

On the other hand, when the access word input from the client 10 is the real name in the step S710, the real name server 71 does not search the real name database 73 like in the first preferred embodiment, but provides the IP address of the web server 72 of the access device 70 to the client 10 to access the web server 72 in step S760.

The client 10 accesses the web server 72 of the access device 70 according to the IP address provided by the real name server 71, and this time, the client 10 accesses the web server 72 together with the access word used for request of the IP address confirmation and the IP address of the client 10 in step S770.

The access word extracting module 721 of the web server 72 extracts the access word information used for request of the IP address confirmation from the information of the accessing client 10 in step S780, and searches the real name database 73 using the extracted access word in  
5 step S790.

In the case where the extracted access word is stored in the real name database 73, the web server accesses the client 10 to the corresponding web page according to the URL information corresponding to the corresponding access word in steps S800 and S810.

10 On the other hand, in the case where the extracted access word is not stored in the real name database 73, the web server 72 drives the search engine 74 in the like manner of the first preferred embodiment and collects information on the web page providing the information including the corresponding access word from a plurality of the servers connected to the  
15 Internet 20, and provides the same to the client 10 in step S820.

By extracting and using the access word used for the request of the IP address confirmation from the information of the accessing client, an additional database to store the client access information is not necessary, and the client can access the corresponding web page more quickly.

20 On the other hand, regarding processing the hierarchical real name, the third preferred embodiment, that is, the web page accessing system encoding the real name into the English data format is described, but, this processing is not restricted to the above-noted method, and in all the preferred embodiments, it can be determined whether the input access word  
25 is the real name or the English name according to the MSB in the like manner of the third preferred embodiment in order for each real name server to process the hierarchical real names. The web server can comprise the search engine in the above-noted preferred embodiments.

As described above, the web page accessing system according to  
30 the preferred embodiment of the present invention accesses the corresponding web page when the real name is input to the URL on the browser (including the email), that is, the Internet address input window, and

further the preferred embodiment can access the corresponding web page when inputting the real name to a search word input window for searching services.

For example, when the client of the above-noted web page system  
5 accesses the web server of the access device, the web server provides a search word input window for accessing the web page, and the user then inputs a desired real name to the search word input window, the web server searches the real name database using this real name to find the corresponding URL information so that the client may directly access the  
10 web page having the corresponding Internet address.

Therefore, in the case of providing the searching services, it is possible not only to simply provide the information on the web page including the corresponding information but also to directly connect the client to the corresponding web page without additional clicks or URL inputting  
15 operation by the client.

Since the web page accessing system according to the preferred embodiments of the present invention can access the web page using the real name as well as the URL of the English domain name, the user does not need to remember each of the access words of the specific web pages.

20 The user can access the web page using the real name when using the BIND program providing the name service on the existing domain name server.

In the case where there is no URL information on the access word input by the client, the present invention provides information on the web  
25 page to which various information relating to the access word is provided by a plurality of the Internet sites, and therefore, the user can easily and quickly access the desired web page.

Also, as the present invention classifies the real name into steps and processes the same, the load provided to the server which processes the  
30 real name is reduced, and thereby, more efficient and quick processing of the real name is performed.

While this invention has been described in connection with what is

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presently considered to be the most practical and preferred embodiment, it is to be understood that the invention is not limited to the disclosed embodiments, but, on the contrary, is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the  
5 appended claims.

**WHAT IS CLAIMED IS:**

1. In a web page accessing system connecting a client to a specific web page on the network, a web page accessing system, comprising:

5 a database storing matched Internet Protocol (IP) addresses, Uniform Resource Locator (URL) information, and real names on a plurality of web pages; and

a real name server, when an access word input from the client is the real name, searching the real name database using the real name, finding a  
10 corresponding IP address, and providing the IP address to the client in order for the client to access the web page corresponding to the IP address.

2. The system of claim 1, wherein the real name database stores a plurality of the real names corresponding to one IP address, and the URL information corresponding to each real name.

15 3. The system of claim 2, wherein the system further comprises a web server which connects the client to the corresponding web page according to the URL information corresponding to the real name input by the client, and the real name server, when another real name corresponds to the IP address corresponding to the real name input by the client, provides  
20 the IP address of the web server to the client so that the client accesses the web server.

4. The system of claim 3, wherein the system further comprises an access database which stores access information including the IP address of the client which accesses the real name server, and the web server connects  
25 the client to the corresponding web page according to whether or not the IP address of the accessing client is stored in the access database.

5. The system of claim 4, wherein the real name server, when another real name corresponds to the IP address corresponding to the real name input by the client, provides the IP address of the web server to the  
30 client, and stores a first access information including the IP address of the client and the URL information corresponding to the real name input by the client in the access information database, and the web server, when the IP

address of the accessing client is included in the first access information stored in the access information database, connects the client to the corresponding web page according to the URL information included in the first access information.

5           6. The system of claim 4, wherein the real name server, when the real name input by the client is not stored in the real name database, provides the IP address of the web server to the client, and stores a second access information including the IP address of the client and the real name input by the client in the access information database, and the system further  
10 comprises a search engine which searches and collects various information including the real name on a plurality of the web pages on the network by using the real name included in the second access information as the search word when the IP address of the client is stored in the second access information of the access information database.

15           7. In a web page accessing system connecting a client to a specific web page on the network, a web page accessing system, comprising:

          a real name database storing matched Uniform Resource Locator (URL) information and real names on a plurality of web pages;

20           a web server, when an access word input by the client is a real name, searching the real name database and finding the corresponding URL information using the real name, and connecting the client to the corresponding web page according to the URL information, and

          a hook module, when the client checks an access word input event  
25 and the access word input event occurs, providing the input access word to the web server.

          8. The system of claim 7, wherein the system further comprises an access banning database which stores English domain names on a plurality of the web pages to which access is to be banned, and the web server, when  
30 the access word input from the client is the English domain name and is stored in the access banning database, bans the access to the web page corresponding to the access word.

30

9. In a web page accessing system connecting a client to a specific web page on the network, a web page accessing system, comprising:

a database storing matched Internet Protocol (IP) addresses, 5 Uniform Resource Locator (URL) information, and real names on a plurality of web pages;

a web server connecting the accessed client to the corresponding web page according to the URL information stored in the real name database; and

10 a real name server, when the access word input by the client is the real name, providing the IP address of the web server so that the client accesses the web server, and the web server extracting the access word input by the real name server, searching the real name database using the real name to find the corresponding URL information, and connecting the 15 client to the corresponding web page according to the URL information.

10. The system of claim 1, wherein when the access word input by the client comprises a dot character, the access word is determined to be the English domain name, and when the access word input by the client does not comprise the dot character, the access word is determined to be the real 20 name.

11. The system of claim 7, wherein when the access word input by the client comprises a dot character, the access word is determined to be the English domain name, and when the access word input by the client does not comprise the dot character, the access word is determined to be the real 25 name.

12. The system of claim 9, wherein when the access word input by the client comprises a dot character, the access word is determined to be the English domain name, and when the access word input by the client does not comprise the dot character, the access word is determined to be the real 30 name.

13. The system of claim 1, wherein the real name comprises non-English languages and the English language.



14. The system of claim 7, wherein the real name comprises non-English languages and the English language.

15. The system of claim 9, wherein the real name comprises non-English languages and the English language.

5 16. In a web page accessing system connecting a client to a specific web page on the network, a web page accessing system, comprising:

a local name server, when an access word input from the client is a non-English real name, encoding the real name into an English data format and outputting the encoded real name, and when the access word is the  
10 English domain name, outputting the input English domain name without any changes;

a real name server providing an Internet Protocol (IP) address corresponding to the real name encoded with the English data format; and

an English domain name server providing the IP address  
15 corresponding to the English domain name, and the local name server providing the IP address provided by the real name server or the English domain name server in order for the client to access the web page having the IP address.

17. The system of claim 16, wherein when the input access word is  
20 represented as eight bits and the most significant bit (MSB) is '1', the access word is determined to be the real name, and wherein when the input access word is represented as eight bits and the most significant bit (MSB) is '0', the access word is determined to be the English domain name.

18. The system of claim 1, wherein the real name server comprises:

25 a hierarchical real name server which processes a hierarchical real name including one or more keywords and provides the corresponding IP address; and

a single real name server which processes a single real name including one keyword and provides the corresponding IP address.

30 19. The system of claim 7, wherein the real name server comprises:

a hierarchical real name server which processes a hierarchical real name including one or more keywords and provides the corresponding IP

address; and

a single real name server which processes a single real name including one keyword and provides the corresponding IP address.

20. The system of claim 9, wherein the real name server comprises:

5 a hierarchical real name server which processes a hierarchical real name including one or more keywords and provides the corresponding IP address; and

a single real name server which processes a single real name including one keyword and provides the corresponding IP address.

10 21. The system of claim 16, wherein the real name server comprises:

a hierarchical real name server which processes a hierarchical real name including one or more keywords and provides the corresponding IP address; and

15 a single real name server which processes a single real name including one keyword and provides the corresponding IP address.

22. The system of claim 18, wherein the hierarchical real name includes one or more keywords divided by a dot character.

23. The system of claim 18, wherein in the case where the real name which is positioned at the rightmost or leftmost position of the keywords of  
20 the hierarchical real name is set to be an upper domain name, the hierarchical real name server sequentially processes the real names from the uppermost domain name and provides the IP address corresponding to the leftmost or rightmost positioned keyword.

24. The system of claim 22, wherein in the case where the real name  
25 which is positioned at the rightmost or leftmost position of the keywords of the hierarchical real name is set to be an upper domain name, the hierarchical real name server sequentially processes the real names from the uppermost domain name and provides the IP address corresponding to the leftmost or rightmost positioned keyword.

30 25. In a method for connecting a client to a corresponding web page using a database storing matched Internet Protocol (IP) addresses, Uniform Resource Locator (URL) information, and real names on the web pages on

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the network, a web page accessing method, comprising the steps of:

determining whether an access word input by the client is the real name;

searching the database and finding the IP address corresponding to  
5 the real name when the access word is the real name; and

providing the IP address to the client so that the client accesses the web page corresponding to the IP address.

26. The method of claim 25, wherein the method further comprises a step of connecting the client to the corresponding web page according to the  
10 URL information input by the client in the case where another real name corresponds to the IP address corresponding to the real name input by the client.

27. In a method for connecting a client to a corresponding web page using a database storing matched Uniform Resource Locator (URL)  
15 information and real names on the web pages on the network, a web page accessing method, comprising the steps of:

determining whether an access word input by the client is the real name;

searching the database and finding the URL information address  
20 corresponding to the real name when the access word is the real name; and  
connecting the client to the corresponding web page according to the URL information corresponding to the real name input by the client.

28. In a web page accessing method of a system comprising: a real name database storing matched Internet Protocol (IP) addresses, Uniform  
25 Resource Locator (URL) information, and real names on the web pages on the network; a real name server providing the IP address to clients; and a web server connecting the client to a specific web page, a web page accessing method, comprising the steps of:

the real name server providing the IP address of the web server to  
30 the client when the access word input by the client is the real name;

the web server extracting the access word input to the real name server by the client when the client is accessed;

searching the real name database and finding the URL information corresponding to the real name in the case where the extracted access word is the real name; and

connecting the client to the corresponding web page according to  
5 the URL information.

29. The method of claim 25, wherein the method further comprises a step of searching and collecting various information including the real name from the web pages on the network using the real name as a search word, and providing the information to the client in the case where the real name  
10 input by the client is not stored in the database.

30. The method of claim 27, wherein the method further comprises a step of searching and collecting various information including the real name from the web pages on the network using the real name as a search word, and providing the information to the client in the case where the real name  
15 input by the client is not stored in the database.

31. The method of claim 28, wherein the method further comprises a step of searching and collecting various information including the real name from the web pages on the network using the real name as a search word, and providing the information to the client in the case where the real name  
20 input by the client is not stored in the database.

32. In a method for connecting a client to a corresponding web page using a real name server and an English domain name server providing corresponding Internet Protocol (IP) addresses corresponding to the web pages on the network by processing non-English real names and English  
25 domain names, a web page accessing method, comprising the steps of:

(a) determining whether an access word input from the client is the non-English real name or the English domain name;

(b) encoding the real name with an English data format when the access word is the real name;

30 (c) providing the encoded real name to the real name server to request a corresponding IP address;

(d) providing the English domain name to the English domain name

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server to request a corresponding IP address when the access word is the English domain name; and

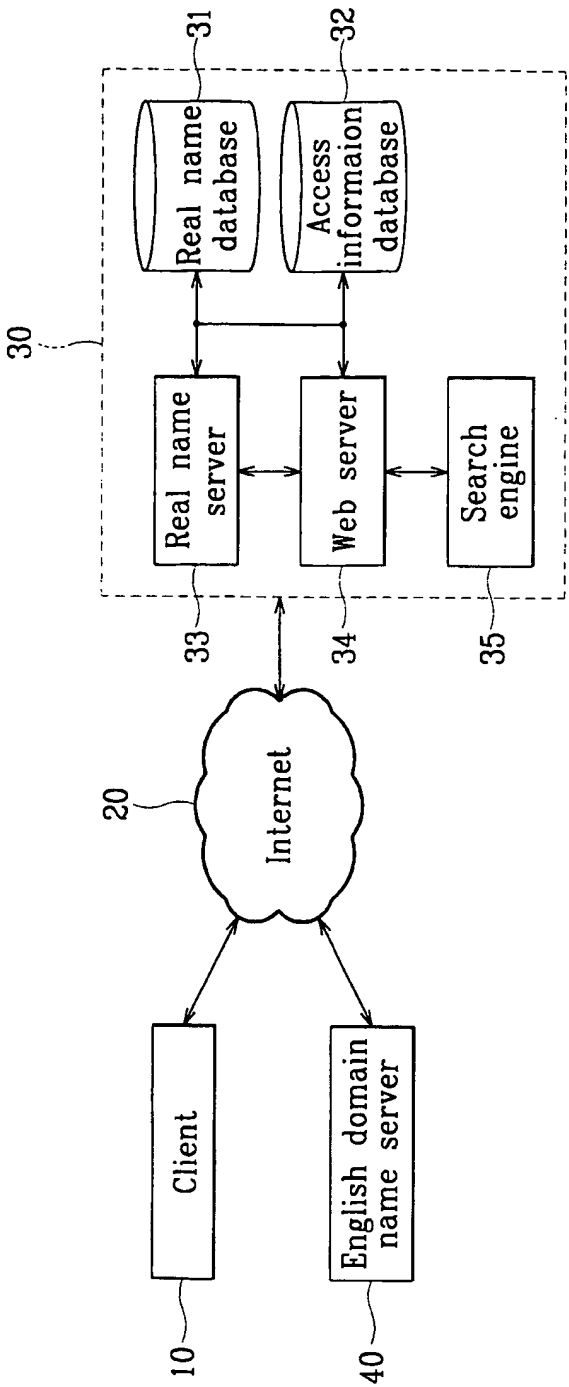
(e) providing the IP address provided by the real name server or the English domain name server to the client so that the client accesses the web  
5 page corresponding to the IP address.

33. The method of claim 32, wherein in the step (a), when the access word input by the client is represented in eight bits and the most significant bit (MSB) is '1', the access word is determined to be the real name, and when the access word input by the client is represented in eight bits and the  
10 most significant bit (MSB) is '0', the access word is determined to be the English domain name.

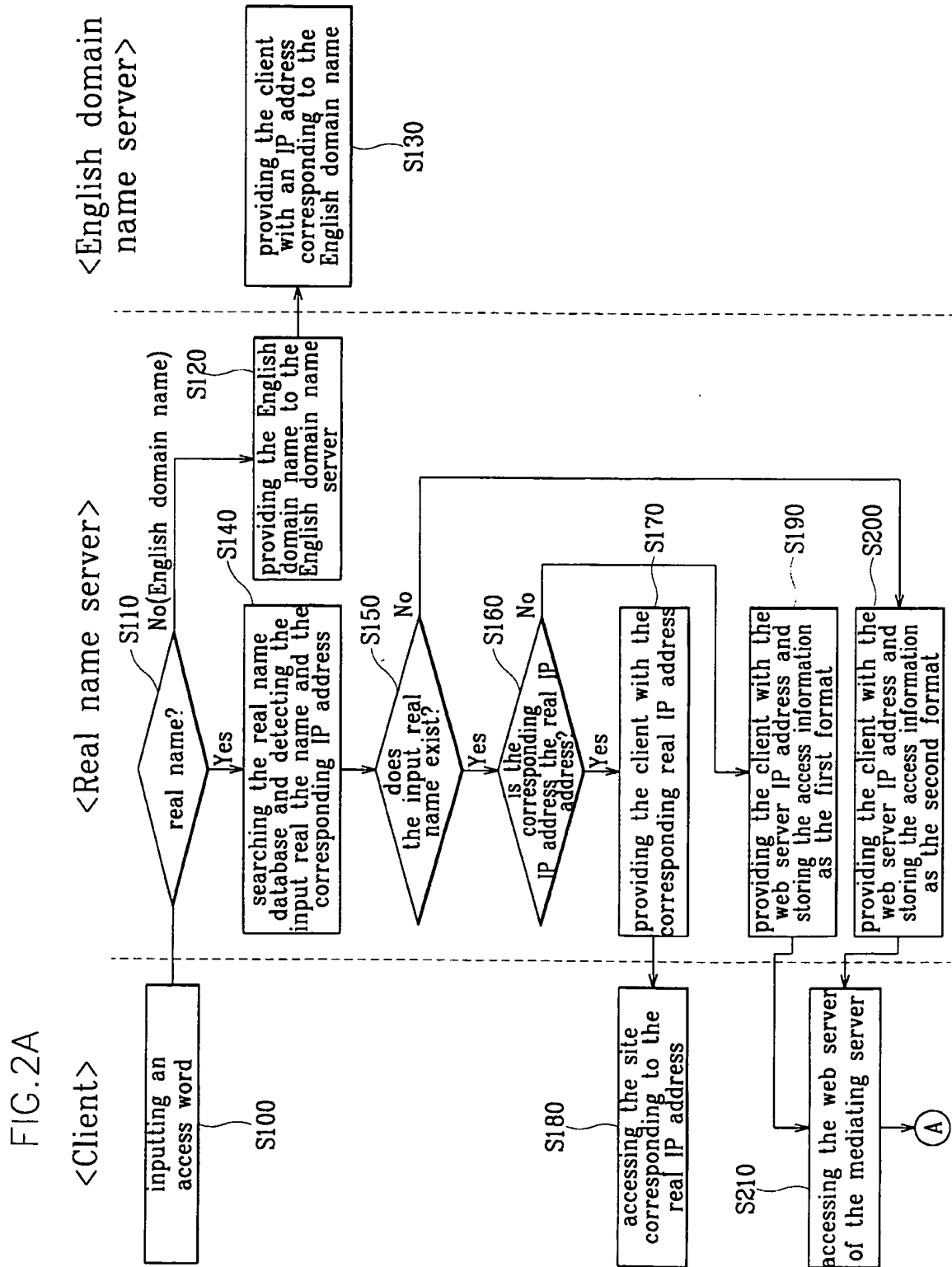
34. The method of claim 25, wherein the method further comprises a step of sequentially processing the keywords of the hierarchical real name from the keyword positioned at the rightmost or the leftmost position, and  
15 providing the IP address corresponding to the leftmost or the rightmost positioned keyword of the keywords to the client.

35. The method of claim 32, wherein the method further comprises a step of sequentially processing the keywords of the hierarchical real name from the keyword positioned at the rightmost or the leftmost position, and  
20 providing the IP address corresponding to the leftmost or the rightmost positioned keyword of the keywords to the client, in the case where the access word input by the client is a hierarchical real name comprising one or more keywords, and the keyword is divided by a dot character,

FIG. 1



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FIG. 2B

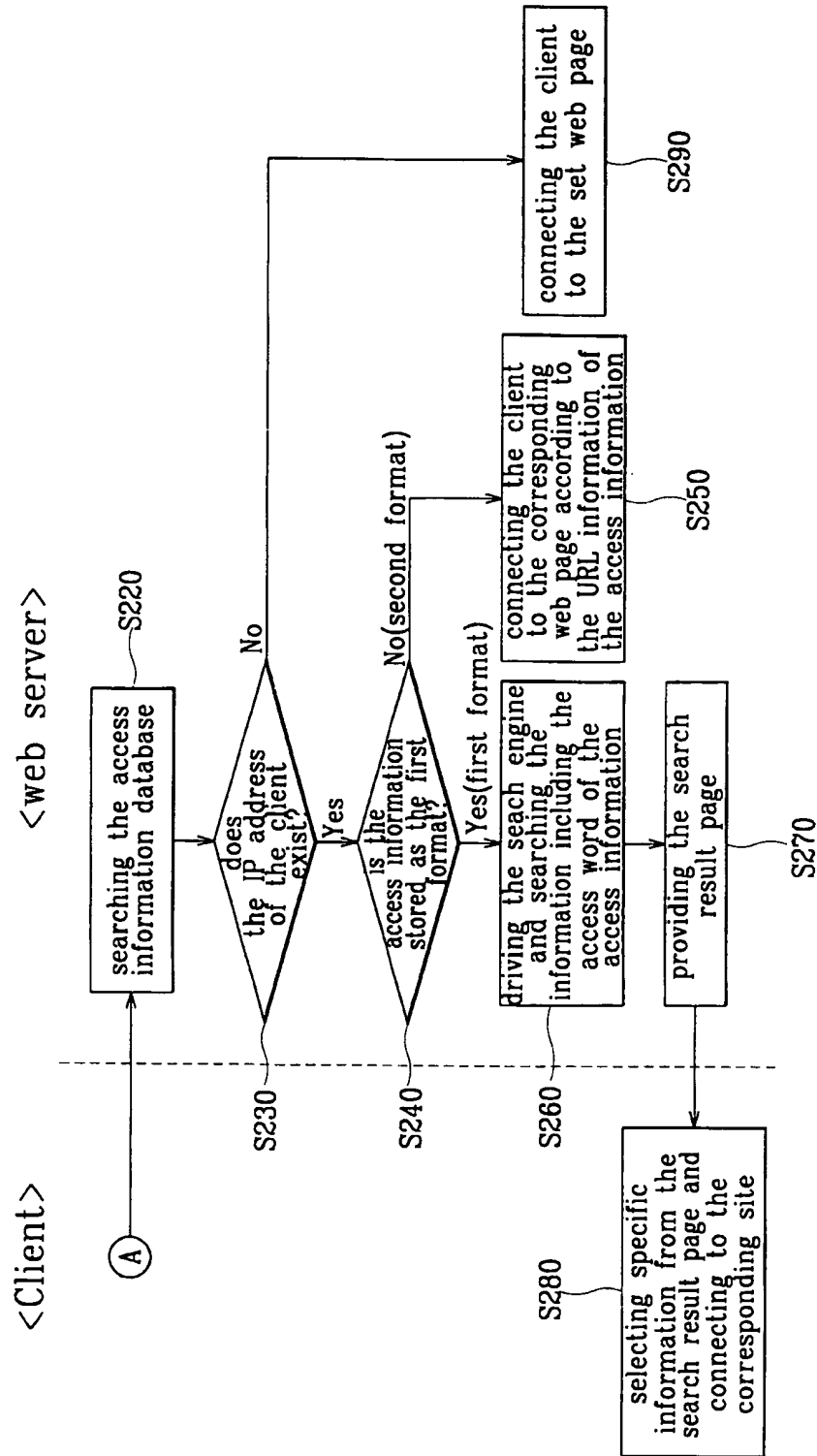
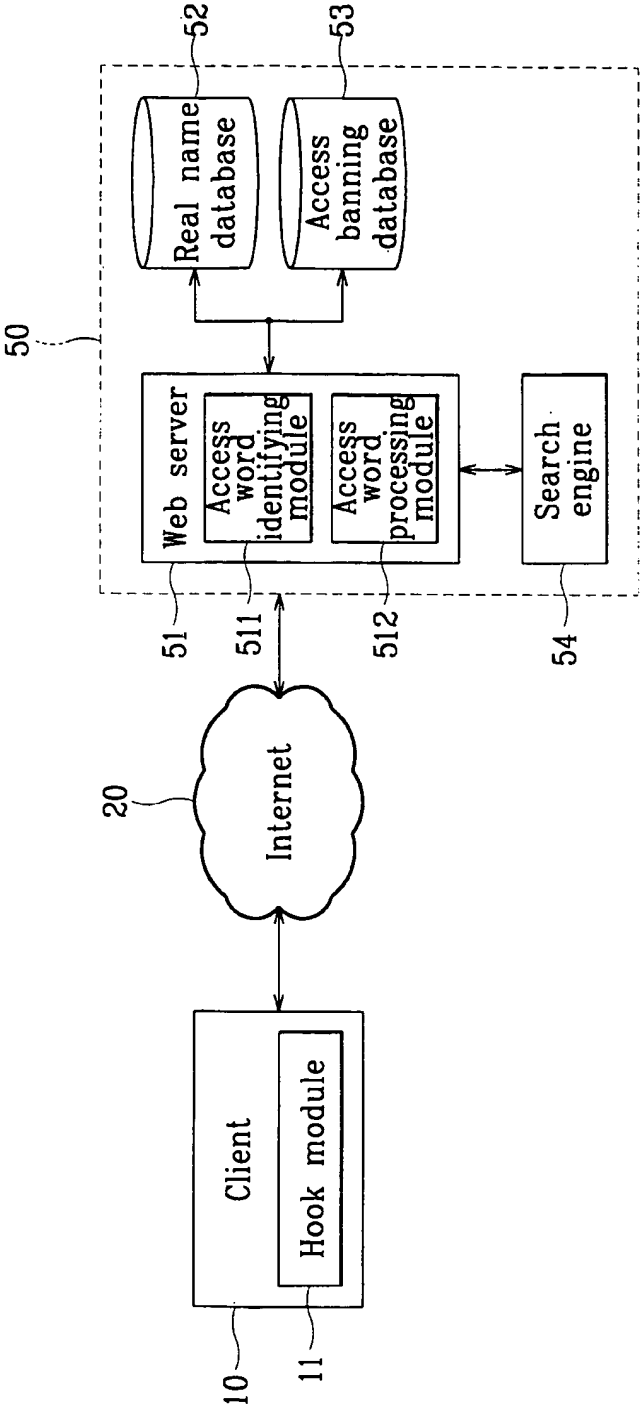
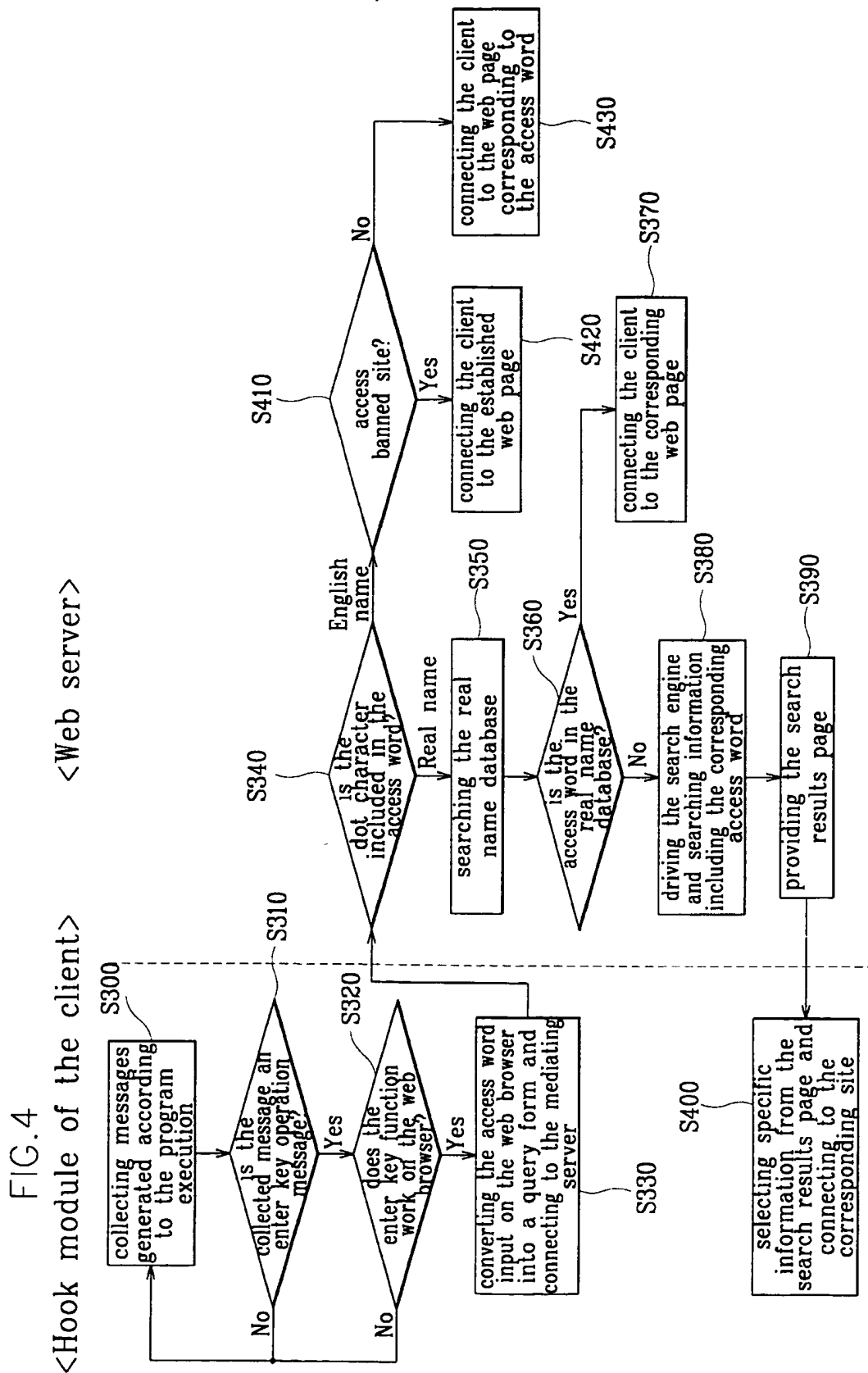




FIG. 3



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FIG. 5

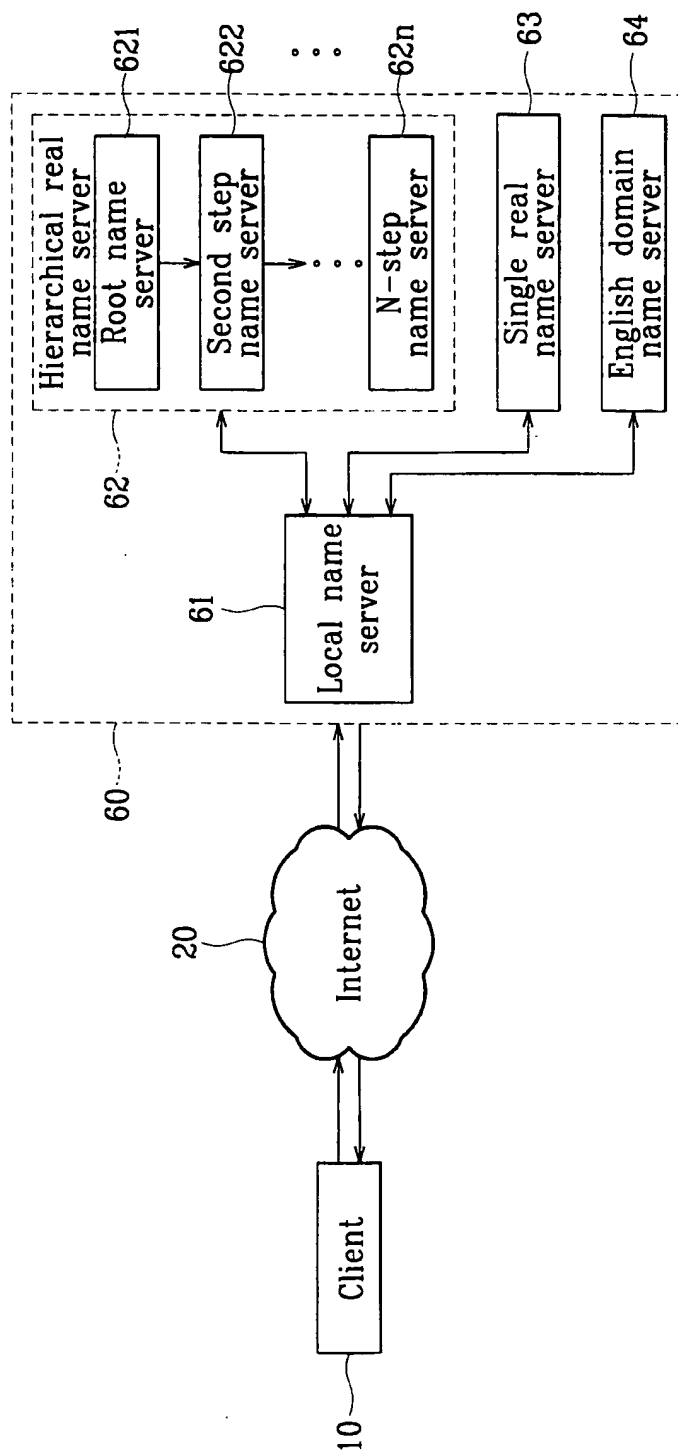


FIG. 6

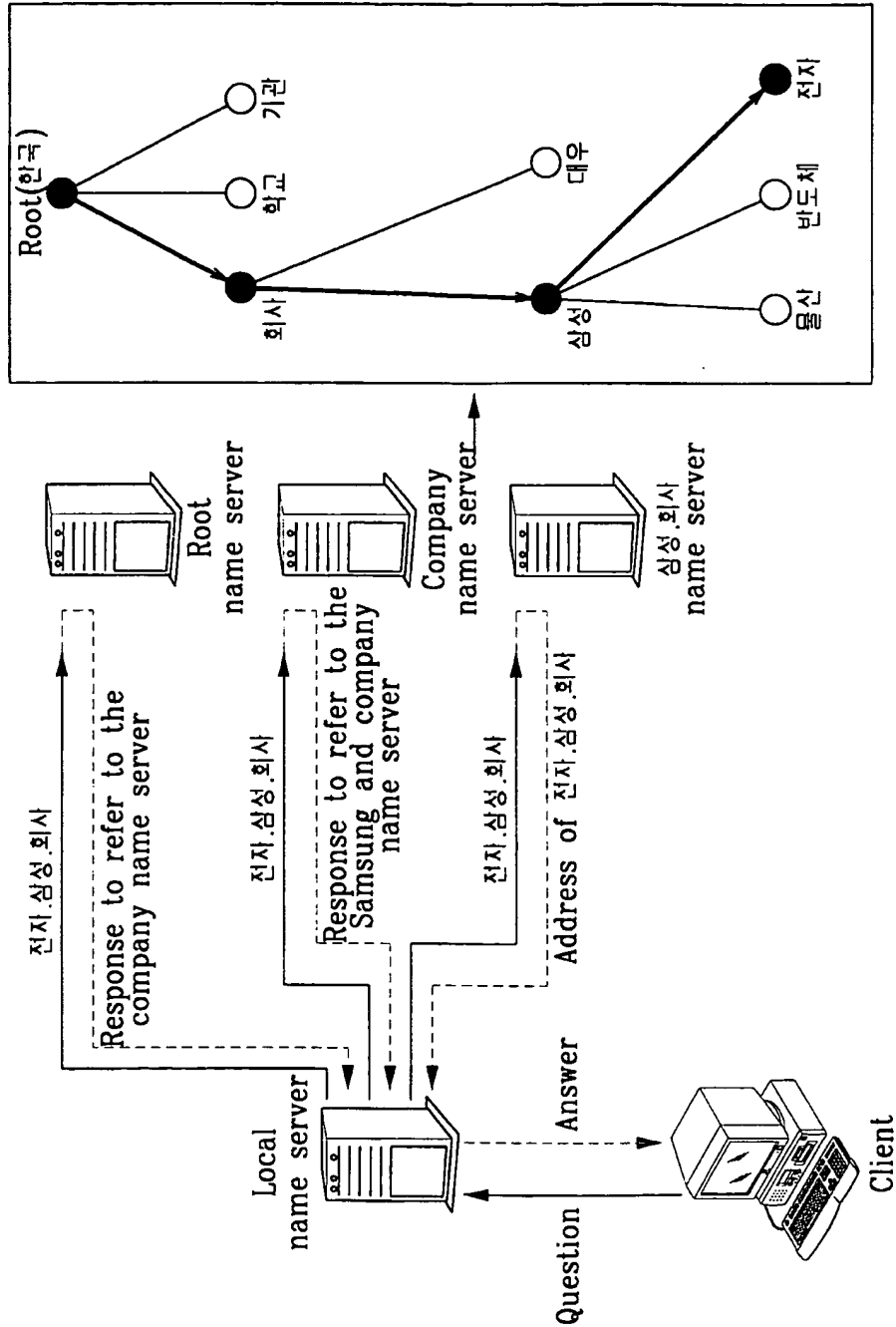
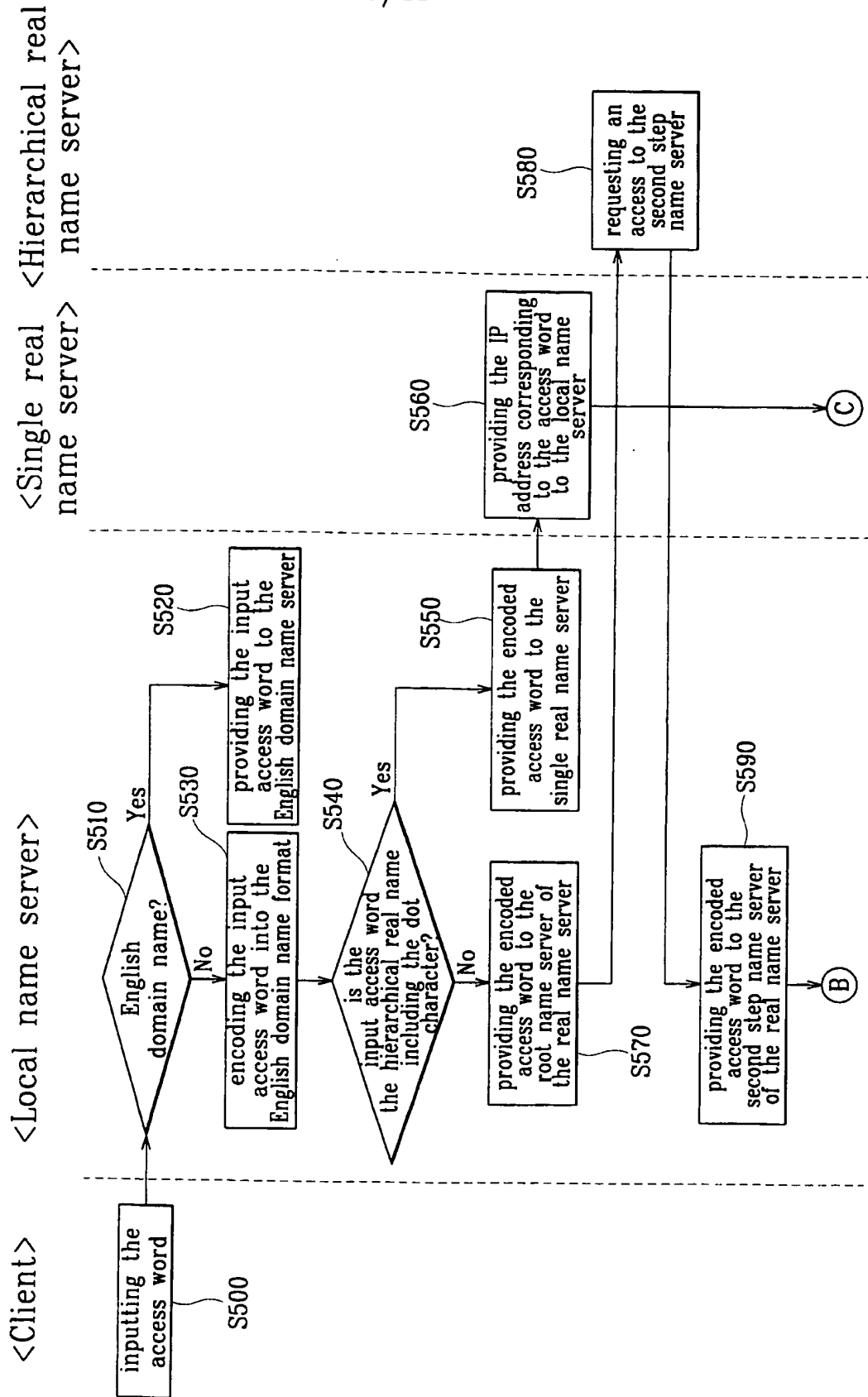
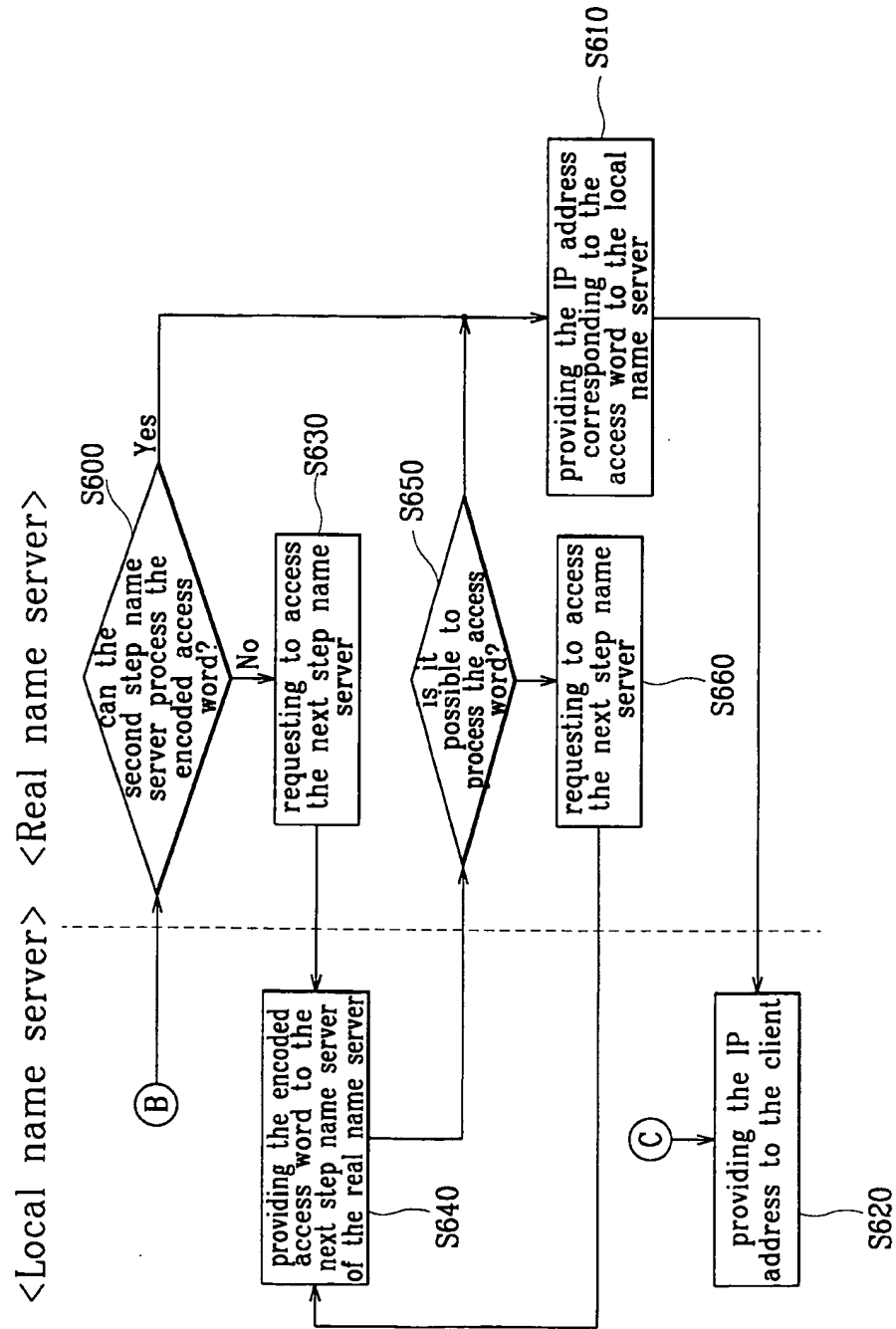


FIG. 7A



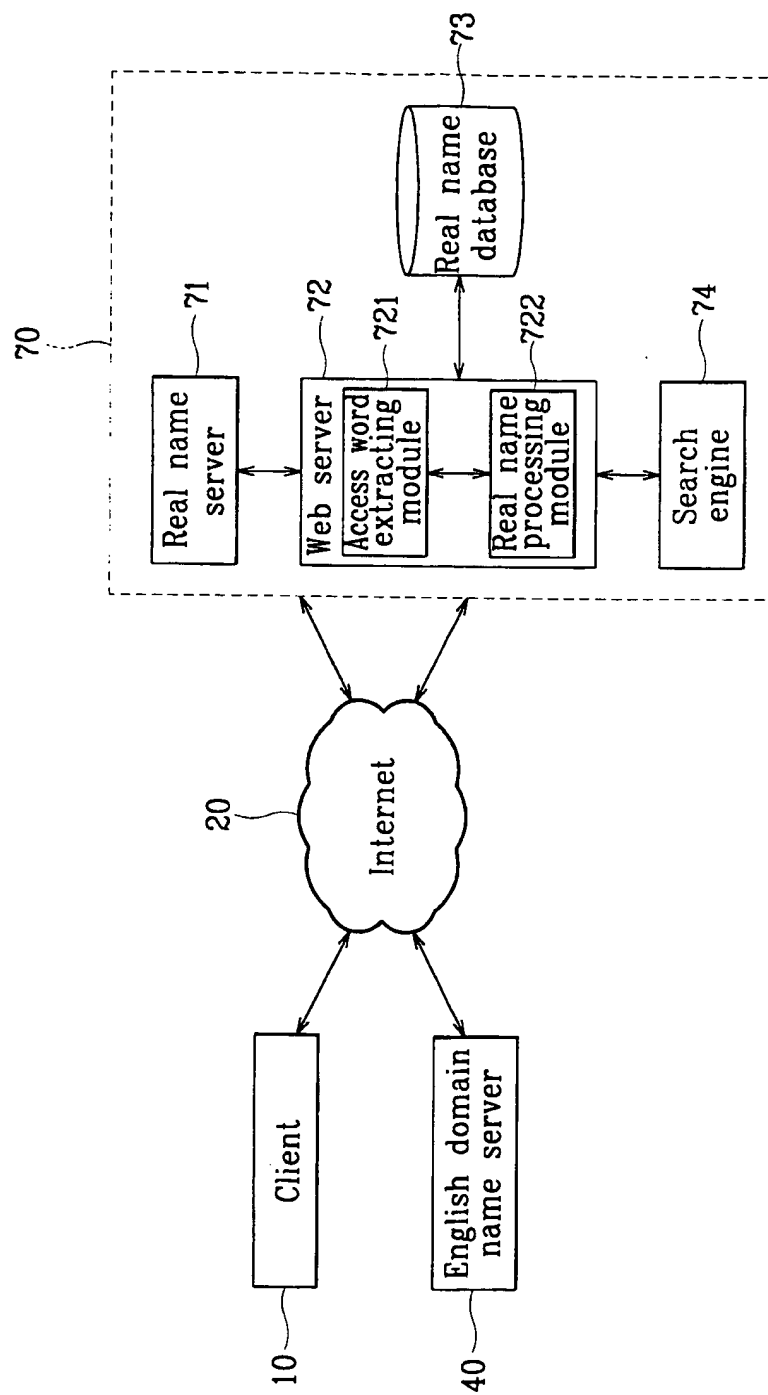
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FIG. 7B

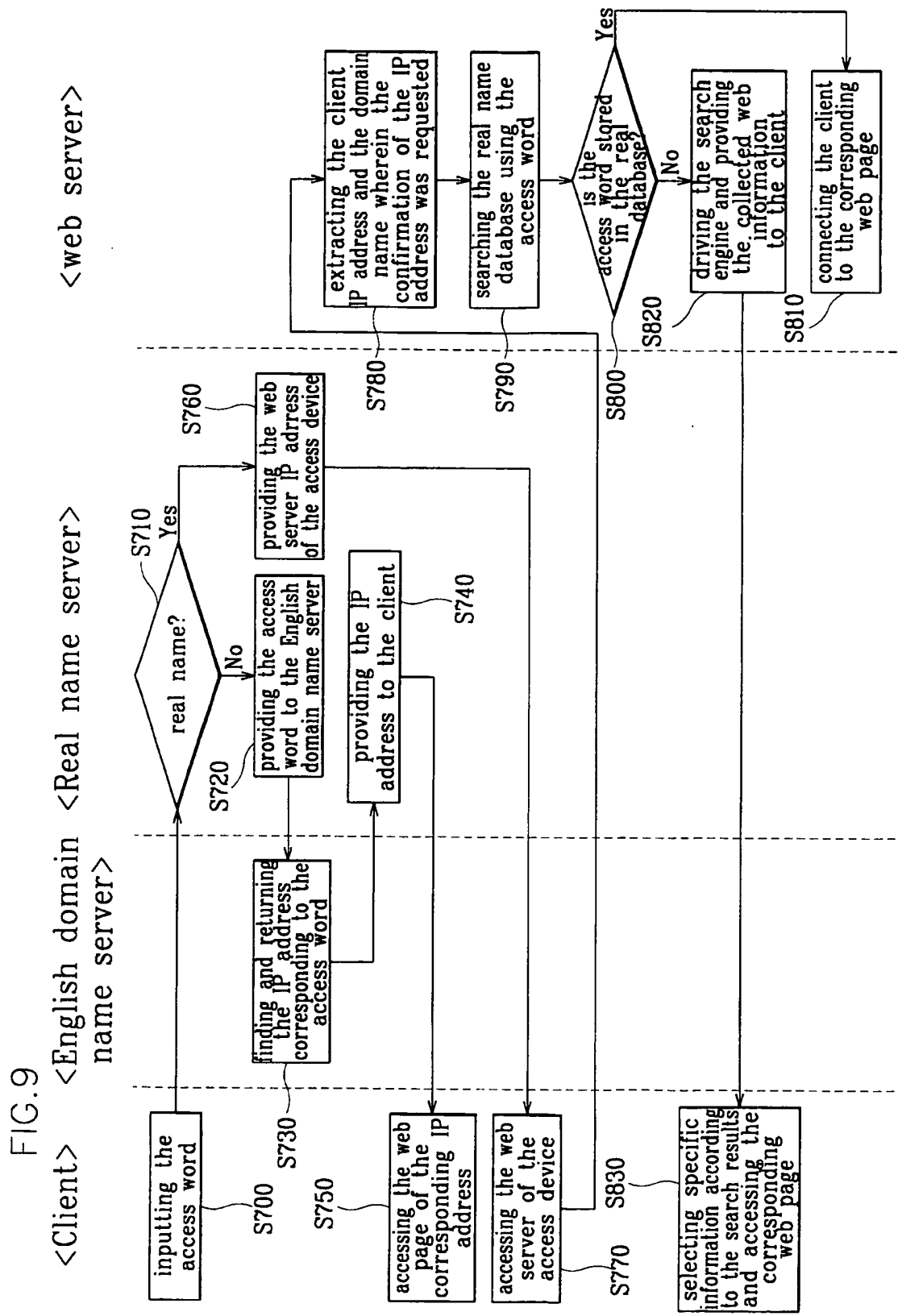


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FIG. 8



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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/KR 00/00579

## CLASSIFICATION OF SUBJECT MATTER

IPC<sup>7</sup>: G06F 17/30

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC<sup>7</sup>: G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, PAJ, EPODOC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99/39280 A2 (Easynet Access Inc.) 5 August 1999 (05.08.99) page 4, line 4 - page 10, line 12.	1-35
X	US 6009459 A (Belfiore et al.) 28 December 1999 (28.12.99) column 3, line 59 - column 7, line 35. ----	1-35

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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Date of the actual completion of the international search

5 May 2001 (05.05.2001)

Date of mailing of the international search report

14 May 2001 (14.05.2001)

Name and mailing address of the ISA/AT

Austrian Patent Office  
Kohlmarkt 8-10; A-1014 Vienna

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Telephone No. 1/53424/448

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

PCT/KR 00/00579

Patent document cited in search report			Publication date	Patent family member(s)			Publication date
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				AU	A1	49269/99	14-02-2000
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				WO	A3	00005684	04-05-2000
				WO	C1	00005684	15-03-2001